Subject: Using OOB Colors with Filled Contour Plots
Posted by David Fanning on Fri, 20 Apr 2012 18:16:49 GMT
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Folks,

Several months ago I introduced the notion of out-of-bounds colors into cgColorbar. These can be set with the OOB_LOW and OOB_HIGH keywords.

Since then several people (including me!) have been confused over how to use the out-of-bounds colors with filled contour plots. I had a reason to have another go at this problem today, and I have written an article that I hope will shed some light on this difficult topic.

The problem really is a fundamental one of how the IDL Contour command decides which contour "level" to color. You have to do a few fancy dance steps to work around this problem and get consistent results with both the FILL and CELL_FILL keywords.

I think the article will make it easier for people to set up these results in a more consistent way. You can find the article here:

http://www.idlcoyote.com/cg_tips/oobcontour.php

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Using OOB Colors with Filled Contour Plots
Posted by Matteo on Mon, 23 Apr 2012 21:18:41 GMT
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David,

thanks this is helpful! In the tutorial it might be beneficial to

substitute:
Levels=[Min(data),levels]
with:
Levels=[Min(data)-1,levels]
or something like that. This way, the code works regardless of whether
we have OOB values. In a situation where min(data) is the first level,
a situation of the kind levels=[0.0, 0.0, ...] is created, which
cannot be contoured.

Am I right?

(one of the "TVLCT" commands is also misspelled)

On Apr 20, 2:16 pm, David Fanning <n...@idlcoyote.com> wrote:
> Folks,
>
> Several months ago I introduced the notion of out-of-bounds
> colors into cgColorbar. These can be set with the OOB_LOW
> and OOB_HIGH keywords.
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> --
> David Fanning, Ph.D.
> Fanning Software Consulting, Inc.

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> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Using OOB Colors with Filled Contour Plots
Posted by David Fanning on Mon, 23 Apr 2012 22:22:48 GMT
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Matteo writes:

> thanks this is helpful! In the tutorial it might be beneficial to
> substitute:
> Levels=[Min(data),levels]
> with:
> Levels=[Min(data)-1,levels]
> or something like that. This way, the code works regardless of whether
> we have OOB values. In a situation where min(data) is the first level,
> a situation of the kind levels=[0.0, 0.0, ...] is created, which
> cannot be contoured.
>
> Am I right?

Well, I'm not sure. I almost always have Min(data) as
the first contour level, because I don't like the
background color "showing through" my contour plot.
And, which color "shows through" depends on whether
you are using the FILL or CELL_FILL keyword, which
also bothers me.

You have to be a little careful about subtracting
1 in a general case like this. It works with most
"reasonable" data, but always seems to fail when
you work with real-world data or are giving an
important demo of your software. Better to have
a firm theoretical understanding of why you are doing
what you are doing! ;-)

> (one of the "TVLCT" commands is also misspelled)

Humm. Thought I fixed that. Maybe I didn't upload the
fixed version. I'll check.

Thanks!

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.